Clinical Guidelines: Identification, Evaluation, and Treatment of Overweight and Obesity in Adults

Overweight[1] and obesity are the second leading cause of preventable death in the United States today. Roughly 97 million American adults 20 years old or older are overweight or obese—55 percent of the adult population. This condition raises substantially adults' risk of morbidity from a number of diseases.

In May 1995, the National Heart, Lung, and Blood Institute's Obesity Education Initiative, in cooperation with the National Institute of Diabetes and Digestive and Kidney Diseases, convened an Expert Panel. Its purpose was to evaluate published information and to determine the most appropriate treatment strategies that would constitute evidence-based clinical guidelines on overweight and obesity for health professionals. The panel's guidelines were based on a systematic review of the scientific literature found in MEDLINE (January 1980 to September 1997).

The Expert Panel abstracted 236 randomized controlled trial (RCT) articles and compiled the data into individual evidence tables. The data were used as the basis for many of the recommendations contained in the guidelines. This Research Summary is based on the ''Executive Summary'' section of the panel's report.

[1]Overweight is defined as a body mass index (BMI) of 25 to 29.9; whereas, obesity is defined as a BMI of $\geq$30.

Summary of Evidence-Based Recommendations

Advantages of Weight Loss

Weight loss decreases the likelihood of developing certain diseases and conditions. The panel's recommendations on the following conditions emphasize the advantages of weight loss.

1. Blood Pressure

Strong and consistent evidence showed that weight loss produced by lifestyle modifications reduces blood pressure levels in both overweight hypertensive and nonhypertensive patients. Recommendation: *Weight loss is recommended to lower elevated blood pressure in overweight and obese persons with high blood pressure.*

2. Serum/Plasma Lipids

Lifestyle trials provided strong evidence that weight loss produced by lifestyle changes in overweight people is accompanied by reductions in serum triglycerides and by increases in HDL-cholesterol. Also, weight loss usually produces some decreases in serum total cholesterol and LDL-cholesterol. Recommendation: *Weight loss is recommended to lower elevated levels of total cholesterol, LDL-cholesterol, and triglycerides, and to raise low levels of HDL-cholesterol in overweight and obese persons with dyslipidemia.*

3. Blood Glucose

Strong evidence showed that weight loss produced by lifestyle change reduces blood glucose levels in overweight and obese persons without diabetes, and weight loss reduces blood glucose levels and HbA_{1c} in some people with type 2 diabetes. Recommendation: *Weight loss is recommended to lower elevated blood glucose levels in overweight and obese persons with type 2 diabetes.*

Measurement of Degree of Overweight and Obesity

Although there are no RCT's that reviewed measurements of overweight and obesity, the Expert Panel found that this segment of patient care warranted further consideration and that this guidance was valuable. Therefore, nonrandomized studies and clinical experience were the basis of the following recommendations.

1. BMI to Assess Overweight and Obesity

Methods exist to assess body fat, but no trial data exist to show that one measure of fatness is better than another for following overweight and obese patients during treatment. The measurement of BMI is a more practical approach in a clinical setting. Studies have shown that BMI provides an acceptable approximation of total body fat for most patients. Recommendation: *Practitioners should use the BMI to assess overweight and obesity. Body weight alone can be used to follow weight loss and to determine efficacy of therapy.*

2. BMI to Estimate Relative Risk

BMI is the favored measure of excess weight to use in epidemiological studies to estimate relative risk of disease. BMI is a simple, rapid, and inexpensive calculation that correlates both with morbidity and mortality. Recommendation: *The BMI should be used to classify overweight and obesity and to estimate relative risk of disease compared to normal weight.*

3. Assessing Abdominal Fat

The panel considered measures of waist circumference, waist-to-hip ratio, and magnetic resonance imaging (MRI) and computed tomography to assess abdominal fat content. Epidemiological studies show that waist circumference is a better marker of abdominal fat content

than waist-to-hip ratio. Also, computed tomography and MRI are expensive and not readily available for routine clinical use. Recommendation: *The waist circumference should be used to assess abdominal fat content.*

4. Sex-Specific Measurements
A high waist circumference is associated with an increased risk for type 2 diabetes, dyslipidemia, hypertension, and cardiovascular disease. Sex-specific cutoffs for waist circumference can be used to identify increased risk associated with abdominal fat in adults who have a BMI of 25 to 34.9. Recommendation: *For adult patients with a BMI of 25 to 34.9 kg/m^2, sex-specific waist circumference cutoffs should be used in conjunction with BMI to identify increased disease risks.*

Goals of Weight Loss

The general goals of weight loss and management are reducing body weight, maintaining a lower body weight over the long-term, and preventing further weight gain.

1. Initial Goal of Weight Loss From Baseline
Overweight and obese patients in well-designed programs can attain a weight loss of as much as 10 percent of baseline weight. An average of 8 percent of baseline weight was lost in diet trials, which included people who did not lose weight. Recommendation: *The initial goal of weight loss therapy should be to reduce body weight by about 10 percent from baseline. With success, further weight loss can be attempted if indicated through further assessment.*

2. Amount of Weight Loss
Weight loss at the rate of 1 to 2 pounds per week commonly occurs for up to 6 months. This represents a calorie deficit of 500 to 1,000 calories per day. Recommendation: *Weight loss should be about 1 to 2 lb/week for a period of 6 months, with the subsequent strategy based on the amount of weight loss.*

How to Achieve Weight Loss

Recommendations emphasized the potential effectiveness of weight control using multiple interventions and strategies.

1. Dietary Therapy
Articles dealing with the effectiveness of diets on weight loss included low-calorie diets (LCD's), very low-calorie diets (VLCD's), vegetarian diets, dietary guidelines of the American Heart Association, the National Cholesterol Education Program's Step I diet with caloric restrictions, and other lowfat regimens with varying combinations of macronutrients. These RCT's indicated that with a low-calorie diet, a person can lose, on average, 8 percent of initial body weight over 3 to 12 months, with an associated decrease in abdominal fat. Recommendations: *(A) LCD's are recommended for weight loss in overweight and obese persons. (B) Reducing fat as part of an LCD is a practical way to reduce calories. (C) Reducing dietary fat alone without reducing calories is not sufficient for weight loss. However, reducing dietary fat, along with reducing dietary carbohydrates, can facilitate caloric reduction. (D) A diet that is individually planned to help create a deficit of 500 to 1,000 kcal/day should be an integral part of any program aimed at achieving a weight loss of 1 to 2 lb/week.*

2. Physical Activity
Physical activity alone in obese adults produces modest weight loss. In addition, physical activity in overweight and obese adults increases cardiorespiratory fitness—independent of weight loss. Recommendations: *(A) Physical activity is recommended as part of a comprehensive weight loss therapy and weight control program because it: (1) modestly contributes to weight loss in overweight and obese adults, (2) may decrease abdominal fat, (3) increases cardiorespiratory fitness, and (4) may help with maintenance of weight loss. (B) Physical activity should be an integral part of weight loss therapy and weight maintenance. Initially, moderate levels of physical activity for 30 to 45 minutes, 3 to 5 days a week, should be encouraged. All adults should set a long-term goal to accumulate at least 30 minutes or more of moderate-intensity physical activity on most, and preferably all, days of the week.*

The effects of a combination of a reduced-calorie diet with increased physical activity on body weight were included in the guidelines. Evidence shows that the combination of a reduced-calorie diet and increased physical activity yields greater weight loss than diet or physical activity alone. Recommendation: *The combination of a reduced calorie diet and increased physical activity is recommended since it produces weight loss that may also result in decreases in abdominal fat and increases in cardiorespiratory fitness.*

3. Behavior Therapy
Behavioral strategies to reinforce changes in diet and physical activity in obese adults produce weight loss in the range of 10 percent over 4 months to 1 year. Without continued behavioral intervention, long-term follow-up of patients undergoing behavior therapy shows a return to baseline weight for most subjects. Also, patient motivation is a key component for success in any weight-loss program. Recommendations: *(A) Behavior therapy is a useful adjunct when incorporated into treatment for*

weight loss and weight maintenance. (B) Practitioners need to assess the patient's motivation to enter weight loss therapy: assess the readiness of the patient to implement the plan and then take appropriate steps to motivate the patient for treatment.

4. Summary of Lifestyle Therapy
The panel made the following recommendation concerning combined interventions: *Weight loss and weight maintenance therapy should employ the combination of LCD's, increased physical activity, and behavior therapy.*

5. Pharmacotherapy
Pharmacotherapy articles provided strong evidence that pharmacological therapy results in weight loss in obese adults when it is used for 6 months to 1 year. Recommendation: *Weight loss drugs approved by the FDA may be used as part of a comprehensive weight loss program, including dietary therapy and physical activity for patients with a BMI of ≥30 with no concomitant obesity-related risk factors or diseases, and for patients with a BMI of ≥27 with concomitant obesity-related risk factors or diseases. Weight loss drugs should never be used without concomitant lifestyle modifications. Continual assessment of drug therapy for efficacy and safety is necessary. If the drug is efficacious in helping the patient to lose and/or maintain weight loss and there are no serious adverse effects, it can be continued. If not, it should be discontinued.*

6. Weight Loss Surgery
Some RCT's examined the effect of surgical procedures on weight loss. These trials also provided evidence that lifelong medical surveillance after surgery is necessary. Recommendation: *Weight loss surgery is an option for carefully selected patients with clinically severe obesity (BMI ≥40 or ≥35 with comorbid conditions) when less invasive methods of weight loss have failed and the patient is at high risk for obesity-associated morbidity or mortality.*

Goals for Weight Loss Maintenance

Upon completion of clinical therapy, people who lose weight frequently regain it. Hence successful weight loss depends on continuing a maintenance program on a long-term basis. The reviewed RCT's suggest that after 6 months of weight loss treatment, maintaining weight loss is important. Recommendations: *(A) After successful weight loss, the likelihood of weight loss maintenance is enhanced by a program consisting of dietary therapy, physical activity, and behavior therapy which should be continued indefinitely. Drug therapy can also be used. However, drug safety and efficacy beyond 1 year of total treatment have not been established. (B) A weight maintenance program should be a priority after the initial 6 months of weight loss therapy. (C) The literature suggests that weight loss and weight maintenance therapies that provide a greater frequency of contacts between the patient and the practitioner and are provided over the long term should be utilized whenever possible. This can lead to more successful weight loss and weight maintenance.*

Special Treatment Groups

1. Smokers
Fear of weight gain upon cessation of smoking is an obstacle for many patients. Recommendations: *(A) All smokers, regardless of their weight status, should quit smoking. (B) Prevention of weight gain should be encouraged and if weight gain does occur, it should be treated through dietary therapy, physical activity, and behavior therapy, maintaining the primary emphasis on the importance of abstinence from smoking.*

2. Older Adults
Restrictions on overall food intake due to dieting could cause inadequate intake of protein or essential vitamins or minerals in the elderly. Also, involuntary weight loss indicative of occult disease could be mistaken for success in voluntary weight reduction. Proper nutritional counseling and regular body weight monitoring in older persons for whom weight reduction is indicated should be provided. Recommendation: *A clinical decision to forgo obesity treatment in older adults should be guided by an evaluation of the potential benefits of weight reduction for day-to-day functioning and reduction of the risk of future cardiovascular events, as well as the patient's motivation for weight reduction. Care must be taken to ensure that any weight reduction program minimizes the likelihood of adverse effects on bone health or other aspects of nutritional status.*

3. Diverse Patient Populations
Standard approaches to obesity treatment should be tailored to the needs of various patients or patient groups. Recommendation: *The possibility that a standard approach to weight loss will work differently in diverse patient populations must be considered when setting expectations about treatment outcomes.*

Source: National Institutes of Health, National Heart, Lung, and Blood Institute, 1998, *Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report.*